PHYSICS education

Volume 10 1975
Pages 1–536

Published by
The Institute of Physics
London and Bristol

Copyright © 1975 by The Institute of Physics and individual contributors.
All rights reserved.

Multiple copying of the contents or parts thereof without permission is in breach of copyright. Permission is usually given upon written application to the Institute to copy illustrations and short extracts from the text of individual contributions provided the source (and, where appropriate, the copyright) is acknowledged.

Published by
The Institute of Physics,
47 Belgrave Square, London SW1X 8QX

Printed in Great Britain by Leicester Printers Ltd. Set in 9/11pt Times

PHYSICS education

onorary Editor

F Archenhold BSc FInstP

eputy Editors

H Bowers BSc MInstP

L Lewis MA FInstP

W Thorpe BSc

itorial Board

B Beswick NB ChB

W Brander BSc FInstP

A Crofts BSc FInstP

E Doust PhD FInstP

E Dutton MA MInstP

E Ellis PhD

Gillespie BSc MInstP

A R Hughes BSc MInstP

Jackson MA DIC CEng MIMechE AFRAeS

C P Ormell MA BLitt

D A Quadling MA FIMA

S Saville BSc

D A Tawney MA MInstP

C A Taylor PhD DSc FInstP

P Thomsen

J A Turner PhD

A E Vines BSc MIBiol

W Westphal

ecutive Editor

F G Paulus BSc PhD MInstP

Staff Editor

A P Ashby BSc

vertisement Manager

adler

Circulation Manager

M J S Beavis BSc

Contents of Volume 10

anuary 1975

plied science for the over 16s: D R Browning *5*
ND technology: B F Gray *9*
DU texts: Deryk T Kelly *14*
oject work in school and higher education: S M Kay *18*
oject work in universities: E Hewton *20*
simple test of Stefan's law: E M Wray *25*
rthly mechanics: two misapprehensions and a heresy: G McClelland *28*
e physics of traffic accidents: Peter Knight *30*
versatile laboratory wind tunnel: H E Stait, J B Baggott, J Hanlon, L W A Harward and J S C McKee *35*
e effects of verbal style in physics teaching: J Houston *38*
fluorescence technique for monitoring oil pollution: J E Ball *42*
ysics on stamps: Appendix V: E J Burge *44*
axwell and the displacement current: A F Chalmers *45*
larization of rainbows: G R Graham *50*
two channel slide method for lecture presentation: P S Allen *52*
ertia of potential energy: J Higbie *55*
ews and comment *1* Queries in physics *24* Physics apparatus *43* Letters *57* Book reviews *61* Forthcoming conferences and courses *64*

March 1975

e role of books in physics teaching: Poul Thomsen *69*
oks on conventional A level physics: Brian Bignell and Eric Deeson *72*
oks for Nuffield A level physics: John L Lewis *74*
oks on experiments and projects at A level: D A Tawney *76*
Books on A level subjects related to physics: F R McKim *79*
Introductory reading and books on topical themes *82*
Journals and reference books: R Schofield *83*
Books on the history, sociology and philosophy of physics: Brian Gee and Maurice Ebison *85*
The mathematics–physics interface in schools: Brian Woolnough *90*
Volcanoes: L N S Kunar *93*
A simple capillary viscometer: C Bowlt *102*
News and comment *65* Queries in physics *90* Notes on experiments *98* Book reviews *104* Letters *121* Physics apparatus *127* Forthcoming conferences and courses *128*

May 1975

Physics courses in higher education
Introduction *129*
The changing face of physics: D J E Ingram *135*
An industrialist's view of university physics teaching: K W Hillier *138*
Sandwich courses: J Topping *141*
Innovations in undergraduate physics teaching–which and why? L R B Elton *144*
Courses in physics in England, Wales and Northern Ireland *149*
Courses in physics in Scotland *237*
Courses in physics in medical colleges *247*
Index *252*

June 1975

Tides of the British seas: Frank Sandon *262*
Experiments with magnetic vector poential: J W Skinner *266*
Crossdisciplinary courses for polytechnics: G Ratcliffe *272*

Piezoelectric ceramics and their applications: I Flinn *274*
A laboratory course for the 'Systems and management' degree: A H Seville and R Jowitt *281*
A Keller plan course in first year university physics: I G Higginbotham *284*
Physics film review *289*
Turbulence and drag reduction: a macroscopic view: A Collyer *305*
The science of colour: S J Edwards *316*
Nostalgia—or nous? A lookback at an early textbook: B R Chapman *322*
News and comment *257* Notes on experiments *312* Queries in physics *321* Letters *326* Book reviews *329* Film reviews *334* Physics apparatus *335* Forthcoming conferences and courses *336*

July 1975

Physics and mathematics in the sixth form: R Schofield and C F Winter *341*
Synchronizing mathematics and physics in the sixth form: D Malvern *344*
Towards a naturalistic mathematics in the sixth form: C Ormell *349*
Mathematics in the pre-service education of science teachers: Uri Haber-Schaim *354*
Erwin Schrödinger 1887–1961: J A D Matthew *357*
Teaching special relativity: A Ziggelaar *361*
Relativity and an experiment on high velocity particles: P Thomsen and G A Salandin *364*
How to make a swing go: R V Hesketh *367*
SHAC—A simple homogeneous analogue computer: Part 1: A Stewart *374*
A potentiality of the Keller plan in the transfer of courses: D J Boud, W A Bridge, P Maas and B C Stace *380*
Mechanics of flight: N H Fletcher *385*
A simple capacitance macometer: D S Parmar and A K Jalaluddin *390*
News and comment *337* Physics apparatus *340* Queries in physics *369* Notes on experiments *370* Letters *392* Book reviews *396* Forthcoming conferences and courses *400*

September 1975

Science in a social context: W F Williams *404*
Physics and society—a view from the Open University: Barrie W Jones *407*
Radiation risks—a possible teaching topic? Robin W Howes *412*
Theoretical problem—practical solution: J Jardine *416*
An analysis of the flow of crowds: J S C McKee, G O'Connor and M J Murphy *418*
Experimental acoustics: Part 1: Measurement of velocity of sound in terms of elastic modulus: I J King and R W B Stephens *420*
Solution of the Schrödinger equation for the hydrogen atom using a modular analogue computing system: M K Summers *424*
SHAC—A simple homogeneous analogue computer: Part 2: A Stewart *430*
An elementary introduction to TTL: A M MacLeod *440*
The power station game: H I Ellington and N H Langton *445*
The physics of power stations: Part 1: Fossil fuelled power stations: N H Langton and H I Ellington *448*
Problem solving with soap films: Part 1: C Isenberg *452*
17th century treatments of one dimensional collisions: G Daniel Goehring *457*
News and comment *401* Physics apparatus *403* Film reviews *436* Notes on experiments *437* Book reviews *460* Letters *461* Queries in physics *463* Forthcoming conferences and courses *464*

November 1975

Physics, education and society: H Bondi *469*
Where is physics going? P Aigrain *475*
Where is education going? A R Kaddoura *481*
Macroscopic properties and interatomic forces: David Tabor *487*
Using case studies in the teaching of physical principles: Ian Lowe *491*
A course on energy resources and supply: J T McMullan, R Morgan and R B Murray *493*
Problem solving with soap films: Part 2: C Isenberg *500*
The physics of power stations: Part 2: Nuclear power stations: H I Ellington and N H Langton *504*
How big is an atom? J H J Peet *508*
Doppler radars *511*
The training of physics teachers: K M Lambert *513*
Archimedes and burning mirrors: D L Simms *517*
News and comment *465* Physics apparatus *468* Notes on experiments *496* Film reviews *511* Queries in physics *521* Letters *522* Book reviews *526* Forthcoming conferences and courses *528*